

Transmitted Via Facsimile to (571) 273-8300

Attorney Docket: 129491 (12553-1017)
PATENT

Remarks

Claims 1-25 are pending in this application. Claims 1, 9-12, 15-17, 20, and 23 have been amended herein. Claims 3, 13, 14, 19, 21, and 24 have been canceled herein. Upon entry of this amendment, claims 1, 2, 4-12, 15-18, 20, 22, 23, and 25 will be pending in the present application. It is respectfully submitted that the pending claims define allowable subject matter.

Claims 10, 16, and 17 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. Claims 10, 16, and 17 have been amended herein to clarify what is being executed. Accordingly, Applicants respectfully request that the rejection of claims 10, 16, and 17 under Section 112, second paragraph, be withdrawn.

Claims 9-18 have been rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. On page 2 of the outstanding Office Action, the Examiner asserts that: "[I]mitations in claim 9 include a computer program configured to modify image data that has already been obtained from multiple imaging modalities. 'There are no positive steps of obtaining images. The previously required data is manipulated without any functionality.'" However, Applicants submit that claim 9 recites functional descriptive material that is statutory subject matter.

Independent claim 9 recites a computer-readable medium encoded with a program configured to instruct a computer to, among other things, fuse at least two of computed tomography (CT) data, single photon emission computed tomography (SPECT) data, and positron emitted tomography (PET) images to form a fused data set, identify a region of interest (ROI) in the fused data set, the ROI corresponding to an organ of interest of an object, and provide a path through the fused data set along which to view the fused data set.

"'[F]unctional descriptive material' consists of data structures and computer programs which impart functionality when employed as a computer component." (See MPEP 2106 II.B.1.)

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When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since the use of technology permits the function of the descriptive material to be realized. (See *In re Lowry*, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994); *In re Warmerdam*, 31 USPQ2d, 1754, 1759 (Fed. Cir. 1994); and MPEP 2106 II.B.1.). The fusing, identifying, and providing recitations of claim 9 are not merely compilations or arrangements of data, but rather are functional and have a practical application because they transform image data for viewing and/or analyzing by a user, for example, to allow viewing of structure and/or metabolic activity that may not be viewable with conventional CT. Claim 9 therefore recites functional descriptive material that is functionally and structurally interrelated to the claimed computer-readable medium. Moreover, the federal circuit has held that the transformation or conversion of subject matter representative of or constituting physical activity or objects (e.g., electrocardiograph signals representative of human cardiac activity or X-ray attenuation data representative of CAT scan images of physical objects) is statutory subject matter. (See *In re Schrader*, 30 USPQ2d 1455, 1459 (Fed. Cir. 1994); and *Arrhythmia Research Technology, Inc. v. Corazonix Corp.*, 22 USPQ2d 1033 (Fed. Cir. 1994)). The claimed CT, SPECT, and/or PET data constitutes subject matter representative of or constituting physical objects and/or activity, and the claimed fusing, identifying, and providing steps are transformations or conversions of the claimed data. Accordingly, applicants submit that independent claim 9 recites statutory subject matter. Claims 10-18 depend from claim 9. Applicants submit that dependent claims 10-18 recite statutory subject matter for at least the reasons discussed above with respect to claim 9.

Claims 13 and 19 have been rejected under 35 U.S.C. § 101 as lacking patentable utility and being directed to non-statutory subject matter, respectively. Applicants submit that claim 13 has patentable utility and that claim 19 is directed to statutory subject matter. However, to expedite prosecution of this applications, claims 13 and 19 have been canceled herein.

Turning to the prior art rejections, claims 1, 9, and 23 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,490,476 (Townsend). Claims 2-8, 10-12, 14-

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18, 20-22, 24, and 25 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Townsend in view of U.S. Patent No. 5,971,767 (Kaufman).

Claim 1 recites a method for combining an anatomic structure and metabolic activity for an object, the method comprising, among other things, identifying a region of interest (ROI) in the fused volume by distinguishing the density of the ROI from the densities of regions outside the ROI. Townsend does not describe or suggest identifying a region of interest (ROI) in the fused volume by distinguishing the density of the ROI from the densities of regions outside the ROI. Accordingly, claim 1 is submitted as patentable over Townsend. Kaufmann does not make up for the deficiencies of Townsend.

Claim 9 recites a computer-readable medium encoded with a program configured to instruct a computer to, among other things, determine whether an object has been prepared for a computed tomograph colonography, determine whether the computed tomography colonography has been performed on determining that the object has been prepared, determine whether a PET scan has been performed on determining that the computed tomograph colonography has been performed, fuse at least two of computed tomography (CT) data, single photon emission computed tomography (SPECT) data, and positron emitted tomography (PET) images to form a fused data set if the PET scan has been performed, identify a region of interest (ROI) in the fused data set, the ROI corresponding to an organ of interest of an object if the PET scan has been performed, and provide a path through the fused data set along which to view the fused data set if the PET scan has been performed.

Townsend does not describe or suggest a program configured to instruct a computer to, among other things, determine whether the object has been prepared for a computed tomograph colonography, determine whether the computed tomography colonography has been performed on determining that the object has been prepared, determine whether a PET scan has been performed on determining that the computed tomograph colonography has been performed, and fuse the at least two of CT data, SPECT data, and PET images, identify the ROI, and provide the

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path through the fused data set if the PET scan has been performed. Accordingly, claim 9 is submitted as patentable over Townsend. Kaufmann does not make up for the deficiencies of Townsend.

Claim 20 recites, among other things, a controller operationally coupled to the radiation source and the radiation detector, the controller configured to, among other things, determine whether the colon is inflated with at least one of gas and air to create a difference in density of a region of interest (ROI) from densities of regions outside the ROI, acquire computed tomography (CT) images generated by performing a CT colonography if the colon has been inflated, acquire positron emission tomography (PET) images generated by performing a PET scan of a colon of the object if the colon has been inflated, fuse the CT images and PET images to form a fused volume if the colon has been inflated, identify the ROI in the fused volume if the colon has been inflated, the ROI corresponding to the colon, and provide a viewing path through the fused volume of interest partially following the ROI if the colon has been inflated. Townsend does not describe or suggest determining whether the colon is inflated with at least one of gas and air to create a difference in density of the ROI from densities of regions outside the ROI, and acquiring computed tomography (CT) images, acquiring positron emission tomography (PET) images, fusing the CT images and PET images, identifying a region of interest (ROI), or providing a viewing path through the fused volume of interest partially following the ROI if the colon has been inflated. Accordingly, claim 20 is submitted as patentable over Townsend. Kaufmann does not make up for the deficiencies of Townsend. Claim 23 is patentable over Townsend and Kaufmann for at least the reasons set forth above with respect to claim 20.

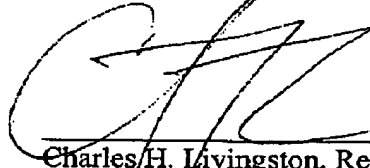
Further, it is respectfully submitted that the dependent claims recite additional features that are neither anticipated nor rendered obvious by the prior art.

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In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,



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